

**REMARKS**

In response to the Official Action dated May 17, 2006, Applicant submits this amendment and response. Reconsideration of the application is respectfully requested.

As an initial matter, Applicant has revised claim 1 as recommended by the Examiner to correct an informality regarding inappropriate use of the word "the."

Applicant appreciates the Examiner's indication that claims 8-15 have been allowed.

As to the rejections, the Examiner rejected claims 1-7 and 16-28 under 35 U.S.C. § 103(a) as being obvious, and therefore unpatentable, over "Lee et al" in view of U.S. Patent No. 4,559,070 to Sweet (hereinafter "Sweet"). The Examiner did not indicate which of the two (2) Lee patents listed in Applicant's IDS was the basis for the rejection. Applicant's comments herein are directed towards U.S. Patent No. 6,44,070 (hereinafter "Lee") as it appears to be the more pertinent reference.

Applicant respectfully traverses the Examiner's rejections, based on the remarks presented below.

**Claims 1-7 and 16-28 are not Obvious.**

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, the prior art references must teach or suggest all the claim limitations. Second, there must be some teaching, suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to combine or modify the reference teachings. Finally, there must be a reasonable expectation of success. The teaching or suggestion to make the claimed modification and the reasonable expectation of success must both be found in the prior art and not based on Applicant's disclosure. *See* MPEP 706.02(J).

Further, the Federal Circuit noted in *In re Fritch* that:

Under Section 103, teachings of references can be combined *only* if there is some suggestion or incentive to do so. Although couched in terms of combining teachings found in the prior art, the same inquiry must be carried out in the context of a purported obvious "modification" of the prior art. The

mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. (emphasis original) 23 U.S.P.Q. 2d 1780, 1784 (Fed. Cir. 1992).

**1. The prior art references do not teach or suggest all the claim limitations.**

As to independent Claims 1, 16 and 23, Applicant respectfully submits that the first element of a *prima facie* case for obviousness has not been met, because the combination of Lee and Sweet does not teach or suggest all the claim limitations.

For example, the combination of Lee and Sweet does not teach or suggest the limitation from Applicant's claim 1, section (g) ii) of "cooling the first liquid stream to produce a substantially condensed first liquid stream and supplying the absorber tower with the substantially condensed first liquid stream as a top absorber feed stream," wherein the "first liquid stream" is obtained by "separating [a] cooled feed steam into a first vapor stream and a first liquid stream." (section (b)).

In the Office Action, the Examiner asserts that Applicant's claimed feature of "splitting" a feed stream, and then feeding the top of an absorber tower with a cooled liquid portion of the feed stream and feeding the bottom of the absorber tower with a cooled vapor portion of the feed stream is provided by Sweet and is "old in the hydrocarbon processing art." (see Office Action, p. 3).

Applicant respectfully disagrees. First, Applicant notes that it is not accurate to describe Applicant's invention as including "splitting" of the feed stream. The term "splitting" is not used in Applicant's claims. Splitting is understood by those of skill in the art to mean that a single stream is divided into two streams of like compositions. For example, Sweet teaches "splitting" of a vapor feed stream into two streams of like compositions. (See column 2, lines 60-65).

In contrast, Applicant's device (22) is a separator, which treats the feed stream to equilibrium separation to produce two streams of different compositions, i.e., an overhead vapor stream and a bottoms liquid stream. Sweet does not supply this feature which is missing from Lee, i.e., "separating" the feed stream and supplying the absorber tower with the substantially condensed first liquid stream as a top absorber feed stream, as provided in Applicant's claim 1. Similar novel features are also provided in Applicant's independent claims 16 and 23.

Second, Applicant notes that in Sweet, a portion of the vapor stream (20) from the split feed stream (10) is cooled (1) and then expanded (5) to form liquid (22). This liquid stream (22), having the same composition as the top vapor stream, is then used as a top feed stream for the absorber (100). In contrast, Applicant's claim 1 indicates that the feed stream is in liquid form drawn from the bottom of the separator before it is cooled and supplied to the absorber as a top feed stream. This creates a very different composition and process. Therefore, Sweet does not supply the feature of "cooling the first liquid stream" as provided in Applicant's claim 1. Similar novel features are also provided in Applicant's independent claims 16 and 23.

The liquid feed (22) in Sweet originates from the vapor feed split, and so it has the same composition as said vapor feed. In contrast, Applicant's liquid feed to the absorber has been separated from the feed stream, and so it has a completely different composition than the liquid feed. Sweet introduces two streams of the same composition but different temperatures for further separation. As such, Sweet is not analogous to Applicant's claimed invention.

Applicant's dependant claims also contain additional novel features.

**2. There is no motivation to combine or modify the reference teachings.**

Applicant respectfully submits that the second *prima facie* element has not been met, as there is no suggestion or motivation, either in the combination of Lee and Sweet or in the knowledge generally available to one of ordinary skill in the art, to combine or modify the teachings of these references to accomplish Applicant's claimed invention.

For example, Sweet splits the vapor feed stream (10). One of the vapor splits (20) is cooled (1) and expanded (5) to liquid form (22) before being used as a top feed to absorber (100). The other vapor split (30) ultimately becomes a bottom feed (90) for the absorber (100).

This teaches away from the current invention. In Applicant's claim 1, clause (d), a split of a vapor stream does occur, but the portion of the vapor split which undergoes expansion is used as a lower distillation tower feed stream, and not as an absorber top feed. Due to equilibrium differences introduced by compositional changes and the introduction of the latent heat of the expanded stream as a driving force through placement, entirely different results are achieved. As such, one skilled in the art would not look to combine Sweet with Lee to produce Applicant's

claimed invention, as the process stream layouts in these references, and the resulting enthalpies and driving forces for the reactions, are substantially different than that of Applicant's claimed invention.

**3. There is no reasonable expectation of success.**

Third, Applicant respectfully submits that the third *prima facie* element has not been met because one skilled in the art would not believe that combining or modifying the cited references would provide a reasonable expectation of success. For example, there is no indication of any kind in the combination of Sweet and Lee of the benefit or desirability of supplying the absorber with a heavy liquid stream from the bottom of a separator as a top feed stream. Sweet does just the opposite by supplying the light stream as top feed.

**Summary**

In summary, Applicant respectfully submits that Claims 1-7 and 16-28 are novel, nonobvious and patentable in view of the cited references. Applicant respectfully requests that Examiner withdraw the rejection and allow the claims.

Please note, in commenting upon the references and in order to facilitate a better understanding of the differences that are expressed in the claims, certain details of distinction between the references and the present invention have been mentioned, even though such differences do not appear in all of the claims. It is not intended by mentioning any such unclaimed distinctions or making any amendments herein to create any implied limitations in the claims. Not all of the distinctions between the prior art and Applicant's present invention have been made by Applicant. For the foregoing reasons, Applicant reserves the right to submit additional evidence showing the distinctions between Applicant's invention to be novel and nonobvious in view of the prior art.

The foregoing remarks are intended to assist the Examiner in re-examining the application and in the course of explanation may employ shortened or more specific or variant descriptions of some of the claim language. Such descriptions are not intended to limit the scope of the claims; the

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actual claim language should be considered in each case. Furthermore, the remarks are not to be considered to be exhaustive of the facets of the invention that render it patentable, being only examples of certain advantageous features and differences which Applicant's attorney chooses to mention at this time.

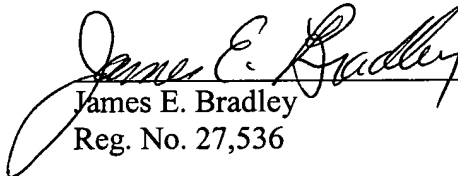
### CONCLUSION

In view of the amendments and remarks set forth herein, Applicant respectfully submits that the application is in condition for allowance. Accordingly, the issuance of a Notice of Allowance in due course is respectfully requested.

Respectfully submitted,

Date:

Sept 18, 2006

  
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